

PV Lithium-Ion Battery System

Table of component models used in the DesignKit

Code	Classification	Part No.	Manufacturer	SPEC
U1	Lithium-Ion Batteries Pack	PBT-BAT-0001	BAYSUN Co., Ltd.	3.7V x 4cells
U2	Solar Cell	SX330	BP Solar	Vmp=168V, Imp=1.78A

Simulation files are stored in folders, as shown in list below.

Simulations

Folder name

- | | |
|--|--------------------|
| 1. PV Li-Ion Battery Charger Circuit..... | charge-sol |
| 2. Constant Current PV Li-Ion Battery Charger Circuit..... | charge-sol-const |
| 3. PV-Battery System Simulation Circuit (SOC1=100)..... | sol_24h_soc100 |
| 4. PV-Battery System Simulation Circuit (SOC1=70)..... | sol_24h_soc70 |
| 5. PV-Battery System Simulation Circuit (SOC1=30)..... | sol_24h_soc30 |
| 6. PV-Battery System Simulation Circuit (SOC1=10)..... | sol_24h_soc10 |
| 7. PV-Battery System Simulation Circuit (SOC1=100, 15W)..... | sol_24h_soc100_15w |

※ Please copy the folder named “Simulations” to your PC. Library files (.lib) are already added.

Design document: **PV Li-Ion Battery System**

Contents

1. Lithium-Ion Batteries Pack
 - 1.1 Lithium-Ion Batteries Pack Specification
 - 1.2 Discharge Time Characteristics
 - 1.3 Single Cell Discharge Characteristics
 - 1.4 Charge Time Characteristics
2. Solar Cells
 - 2.1 Solar Cells Specification
 - 2.2 Output Characteristics vs. Incident Solar Radiation
3. Solar Cell Battery Charger
 - 3.1 Concept of Simulation PV Li-Ion Battery Charger Circuit
 - 3.2 PV Li-Ion Battery Charger Circuit
 - 3.3 Charging Time Characteristics vs. Weather Condition
 - 3.4 Concept of Simulation PV Li-Ion Battery Charger Circuit + Constant Current
 - 3.5 Constant Current PV Li-Ion Battery Charger Circuit
 - 3.6 Charging Time Characteristics vs. Weather Condition + Constant Current
4. Simulation PV Li-Ion Battery System in 24hr.
 - 4.1 Concept of Simulation PV Li-Ion Battery System in 24hr.
 - 4.2 Short-Circuit Current vs. Time (24hr.)
 - 4.3 PV-Battery System Simulation Circuit
 - 4.3 PV-Battery System Simulation Result

Simulations index